

**BAMBARA TESTACEA (BRITTEN, 1926), AN ADVENTIVE
FEATHERWING BEETLE (COLEOPTERA: PTILIIDAE) NEW TO
THE AUSTRALIAN FAUNA**

JASON F. MATÉ-NANKERVIS

7 Acorus Place, Sunnybank, Qld 4109

Abstract

Recent surveys in and around Brisbane have resulted in the discovery of populations of a previously unrecorded species of Ptiliidae. The species, *Bambara testacea* (Britten, 1926), has been found to be well established in urban and suburban environments in Brisbane as well as in remnant patches of natural vegetation and in disturbed areas bordering nature reserves. The newly recorded species is briefly characterised taxonomically and ecologically in the context of the Australian fauna.

Introduction

The Australian ptiliid fauna is very poorly known. Other than Cedric Deane's seminal papers on the Australian fauna (Deane 1930, 1931, 1932, 1934), where he described the majority of the 57 currently recorded species, and Colin Johnson's revision of the fauna of New Zealand and selected Pacific islands (Johnson 1971, 1977, 1982), only one other paper has dealt with the taxonomy or faunistics of the Australian ptiliid fauna (Hall 1999). It is therefore unsurprising that new or adventive species await discovery, even in urban environments. Recent surveys by the author in and around Brisbane have resulted in the discovery of a newly recorded adventive species, *Bambara testacea* (Britten, 1926).

Materials and methods

All specimens were collected by sieving litter under different conditions and in different localities. All litter was extracted in Winkler extractors and the specimens stored in 80% ethanol until mounted. Specimens used for microscopic examination were cleared in KOH (1%) for 2-3h and then in lactic acid overnight. They were mounted in glycerol and photographed with NIKON E995 connected to a NIKON Alfaphot 2 (Y52-H). To create the photographic montages the program CombineZP was used (<http://www.hadleyweb.pwp.blueyonder.co.uk/>). Voucher specimens have been deposited in the author's collection and in the Queensland Museum, Brisbane.

Discussion

Material examined. QUEENSLAND: 49 ♀♀: University of Queensland grounds, St Lucia, -27.4973, 153.0168, 10-15.iii.2015; Banksia Park, St Lucia, -27.4988, 153.0033, 21.iv.2013 & 1-5.iv.2015; Jindalee Park, Jindalee, -27.5295, 152.9383, 14.ii.2015; Spring Creek Park, Kuraby, -27.6147, 153.0964, 10.ii.2015; Moora Park, Shorncliffe, -27.3238, 153.0843, 17.vii.2015; and Sir John Chandler Park, Indooroopilly, -27.5190, 153.0089, 8.vii.2015. In addition, the species has been recovered from Mt Glorious, -27.3291, 152.7541, 20.ix.2014 and Mt Cootha, Bardon, -27.4645, 152.9672, 1.x.2014, ex flood debris.

Description

Bambara Vuillet is a pantropical genus currently numbering 30 species but with many additional species awaiting description. Although currently placed in the subfamily Ptiliinae, its affinities are unclear (Sörensson and Johnson 2004). *Bambara testacea* can be readily distinguished from the other known Australian genera by the following combination of characters: compact and broad habitus reminiscent of a small *Acrotrichis* Motschulsky yet lighter in colour (yellow or light fuscous) and slightly convex, with a fine but dense and decumbent pubescence evenly covering the entire dorsal area (Fig. 1f); pronotum broader than long, with basal margins bisinuate near angles (Figs 1a-b); elytra covering the abdomen except pygidium, distal border of the latter simple (Fig. 1e); pro- and mesocoxae contiguous, the prosternum (= proventrum) much reduced anteriorly; metacoxae contiguous and consisting ventrally of a large, triangular lamina (Fig. 1d); antenna 11-segmented, with segments 3-8 filiform and 9-11 lightly moniliform, forming a loose three-segmented club; eyes well developed, notched posteriorly. For additional characters and full diagnosis of the genus see Dybas (1966), Johnson (1985) and Darby (2014).

The spermatheca in *Bambara* is well developed and sclerotised. In *B. testacea* it is C-shaped, elongate and relatively large (Fig. 1c: 150-160 μm long). Morphologically, it is quite invariant intraspecifically and the populations of *B. testacea* examined so far from Brisbane all conform to Dybas' Florida morph (1966, p 23, fig 4d: appears as *B. lutea* Dybas, later synonymised by Johnson 1985). So far as it is known, *B. testacea* is a fully parthenogenetic species and therefore examination of the spermatheca is necessary for positive identification. The spermatheca is very similar to several other species found in other countries and the positioning of the pump and gland insertion point in relationship to each other should be very carefully examined. Dybas (1971) dealt specifically with the separation of *B. testacea*.

Distribution and ecology

Bambara testacea is common and widely distributed, occurring during much of the year (February-April / July-October). It has been assumed to be associated with decaying woody litter and sawdust (Dybas 1966), but Johnson (1985) commonly found it in good numbers in Indian Ocean islands by sieving leaf litter. In Brisbane the species is most common in parks and gardens, although it is also found in nature reserves with some level of human modification. In urban environments it has been found in large numbers in the leaf litter accumulated under bushes and under litter in lawns, where it is often the only ptiliid species present. Interestingly, although several piles of grass clipping were examined, no specimens were found in them, even when the species was found nearby.

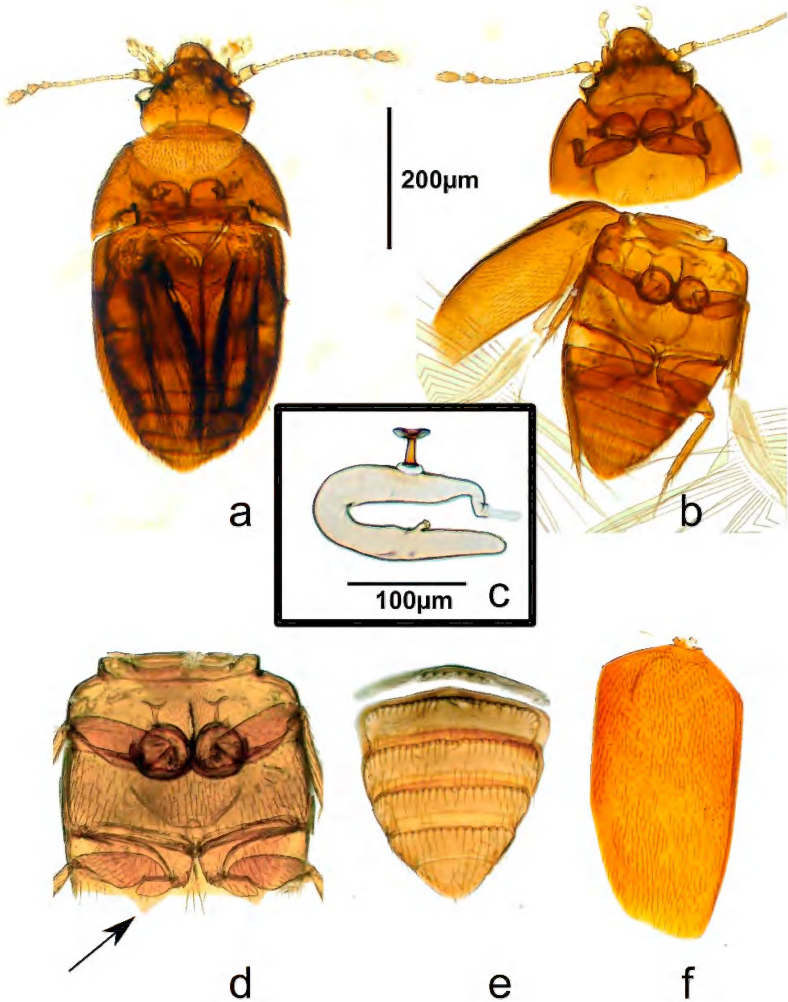


Fig. 1. *Bambara testacea* (Britten, 1926): (a) dorsal habitus; (b) ventral habitus; (c) spermtheca; (d) ventral view of meso and metathorax showing contiguous mesocoxa and triangular lamina in metacoxa; (e) pygidium and tergites; (f) dorsal view of right elytron showing pubescence.

Bambara testacea appears not to be attracted to ultraviolet (UV) light, with none collected in a UV light trap that the author has been running for the past year, even though specimens were collected from leaf litter only a few metres away. Although Dybas (1966) reported that some *Bambara* species (e.g. *B. frosti* Dybas) were captured in light traps, he doubted that they were actively attracted but instead passively accumulated during mass flights. It is therefore likely that this species, as well as others in the genus, will be found in other areas that have not been sampled specifically for ptiliids.

Acknowledgement

I would like to thank the Entomological Society of Queensland for enabling access to the Mt Glorious site during the September 2014 Bug Catch.

References

- BRITTEN, H. 1926. The Percy Sladen Trust Expedition to the Indian Ocean in 1905. No. IV. Coleoptera, Ptiliidae (Trichopterygidae). *Transactions of the Linnean Society of London*, 2nd Series, *Zoology*, **19**(1): 87–92.
- DARBY, M. 2014. Studies of Madagascan Ptiliidae (Coleoptera) 4: The genus *Bambara* including eight new species and the first account of blindness and aptery in the genus. *Zootaxa* **3895**(2): 151-169.
- DEANE, C. 1930. Trichopterygidae of Australia and Tasmania. Descriptions of six new genera and eleven new species. *Proceedings of the Linnean Society of New South Wales* **55**(4): 477-487.
- DEANE, C. 1931. Trichopterygidae of Australia and adjacent islands. Descriptions of five new genera and twenty new species. *Proceedings of the Linnean Society of New South Wales* **56**(3): 227-242.
- DEANE, C. 1932. Trichopterygidae of Australia and adjacent islands. Descriptions of two new genera and eighteen new species. *Proceedings of the Linnean Society of New South Wales* **57**(3-4): 181-196.
- DEANE, C. 1934. Small beetles. *Victorian Naturalist* **50**(10): 242-244.
- DYBAS, H.S. 1966. Evidence for parthenogenesis in the featherwing beetles, with a taxonomic review of a new genus and eight new species (Coleoptera: Ptiliidae) *Fieldiana (Zoology)* **51**(2): 11-52.
- DYBAS, H.S. 1971. The identity of *Bambara invisibilis* (Nietner) from Ceylon (Coleoptera: Ptiliidae). *The Entomologist* **104**: 321-323.
- HALL, W.E. 1999. Generic revision of the tribe Nanosellini (Coleoptera: Ptiliidae: Ptiliinae). *Transactions of the American Entomological Society* **125**(1-2): 39-126.
- JOHNSON, C. 1971. Some Ptiliidae from the Philippine, Bismarck and Solomon Islands (Insecta, Coleoptera). *Steenstrupia* **2**: 39-47.
- JOHNSON, C. 1975. Arthropoda of the subantarctic islands of New Zealand. 8. Coleoptera: Ptiliidae. *New Zealand Journal of Zoology* **2**(1): 9-14.
- JOHNSON, C. 1982. An introduction to the Ptiliidae (Coleoptera) of New Zealand. *New Zealand Journal of Zoology* **9**(3): 333-376.
- JOHNSON, C. 1985. Revision of Ptiliidae (Coleoptera) occurring in the Mascarenes, Seychelles and neighbouring islands. *Entomologica Basiliensia* **10**: 159-237.
- SÖRENSSON, M. and JOHNSON, C. 2004. The first European records of the pantropical genus *Bambara* Vuillet, and a review of the immigrant featherwing beetles in Europe (Coleoptera: Ptiliidae). *Koleopterologische Rundschau* **74**: 287-302.